

CLAIMS

1. Pneumatic thread stretcher (T), in particular for a rapier weaving machine (R) or a knitting machine, comprising a substantially straight tube body (11) having one end communicating with a pressurised air supply (P) and remote from the one end having a blow-out end which defines a thread guiding channel and air current guiding channel (20), and an air current deflection surface (19) arranged in front of the blow-out end substantially in the vicinity of a theoretical extension of the axis of the tube body, the air current deflection surface (19) being bent in blowing direction from the blow-out end in curved fashion away from the axis of the tube body, **characterised in that** the air current deflection surface (19) is a seamless, sidewardly limited prolongation (12) of the inner wall of the guiding channel (20).
2. Pneumatic thread stretcher as in claim 1, **characterised in that** the air current deflection surface (19) is integrally formed with the tube body (11).
3. Pneumatic thread stretcher as in claim 1 or 2, **characterised in that** the air current deflection surface (19) is arranged in the prolongation which is formed like a half pipe limited at both sides by guiding walls (17).
4. Pneumatic thread stretcher as in claim 1, **characterised in that** the cross-section of the prolongation (12) is substantially U-shaped including side walls (17) which, starting from the air current deflection surface (19), diverge or converge or extend in parallel.
5. Pneumatic thread stretcher as in claim 1, **characterised in that** the prolongation (12) is formed from an excess length of the tube body (11) by cutting open and bending the tube walls outwardly and bending away the excess length to one side of the axis of the tube body.
6. Pneumatic thread stretcher as in claim 1, **characterised in that** in the communication with the pressured air supply (P) at least one, preferably remotely controlled, adjustment member (14, M) is contained by which the flow rate or the

pressure of an air current produced along the air current deflection surface (19) is adjustable and/or switchable between at least two different values.

7. Thread processing system (S) comprising a thread consuming textile machine (R), in particular a rapier weaving machine or a knitting machine, at least one thread feeding device (F) and at least one pneumatic thread stretcher (T) arranged in the thread run path downstream of the thread feeding device, which thread stretcher includes a guiding channel communicating with a pressurised air supply (P) and has a blow-out end directed counter to the thread running direction, and an air current deflection surface (19) situated in blowing direction in front of the blow-out end for deflecting the thread by an air current from the straight running path into a loop, **characterised in that** an assembly (H) is provided for switching the flow rate or the pressure of the air current along the deflection surface (19) between at least two different levels and in association to the operation cycle of the textile machine (R).
8. Thread processing system as in claim 7, **characterised in that** in the communication with the pressurised air supply (P) at least one adjustment member (14) including an electric adjusting drive (M) is provided, preferably a magnet valve, and that between the adjustment drive (M) and a control device (CU) of the textile machine (R) and/or of the thread feeding device (F) and/or a communication system (K) of the thread processing system (S) a signal connection (15) is provided, preferably extending to a control box (CB) within the communication system.
9. Thread processing system as in claim 8, **characterised by** an assembly (H) which commonly is associated to pneumatic thread stretchers (T) is several thread channels and which is switchable depending on the pattern of the product produced in the textile machine (R).
10. Thread processing system as in claim 8, **characterised by** an assembly (H) associated to a pneumatic thread stretcher (T) of one thread channel, the assembly (H) being switchable depending on the operation cycle of the textile machine in the one thread channel.

11. Thread processing system as in at least one of claims 7 to 10, **characterised in that** in a thread processing system (S) having a rapier weaving machine (R) the flow rate or the pressure in the thread stretcher (T) is switched to the high level by the assembly (H) respectively when the bringer gripper (B) takes the thread and/or when the bringer gripper (B) transfers the thread to the taker gripper (N) and/or at the end of the insertion, preferably by means of signals correlated to the rotational angle of the rapier weaving machine when the thread is taken and/or when the thread is transferred and/or at the insertion end.
12. Thread processing system as in at least one of claims 7 to 10, **characterised in that** in a thread processing system (S) comprising a rapier weaving machine (R) having several thread channels which are alternately activated depending on the weaving pattern a pneumatic thread stretcher (T) is functionally associated to each thread channel, and that the flow rate or the pressure for the pneumatic thread stretcher (T) of a not activated thread channel is adjusted by the assembly (H) to the low level, preferably by means of signals representing at least one not activated thread channel (Y, Y1).
13. Thread processing system as in at least one of claims 7 to 12, **characterised in that** the pneumatic and controlled thread stretcher (T) is functionally combined with a stationary thread braking ring, preferably a soft bristle braking ring (8) which contacts a withdrawal end (9) of a stationary storage drum (4) in the thread feeding device (F).